CLAIMS

1. An embedded resistor comprising a thin film cermet material deposited by sputtering on a substrate and having a nearly zero TCR, said thin film cermet material comprising M_xSiy0_z,

where M = W or Ta

2. The invention according to claim 1 wherein deposition onto the substrate is performed by sputtering of a composite target of W, or Ta, and SiO_2.

3. The invention according to claim 1 wherein deposition onto the substrate is performed by co-sputtering of two targets: a first target of W or Ta and a second target of SiO_2.

4. The invention according to claim 2 wherein said substrate is copper foil.

5. The invention according to claim 3 wherein said substrate is copper foil.

6. The invention according to claim 2 wherein said thin film cermet material is deposited by r.f. sputtering on a substrate.

7. The invention according to claim 3 wherein sputtering of said SiO_2 target is r.f. sputtering.

8. A method for forming a cermet thin film resistor such as the one described in claim 6 including the steps of:

depositing said thin film resistor on a substrate utilizing r.f. magnetron sputtering with argon gas; and,

controlling the resistivity and TCR of said cermet thin film resistor by varying the sputtering power and pressure.

9. A method for forming a cermet thin film resistor such as the one described in claim 7, which includes the steps of: deposition of the film on a substrate utilizing r.f. and d.c. magnetron sputtering with argon gas; and controlling the resistivity and TCR of the cermet thin film by varying the sputtering power and pressure.

10. The method according to claim 8 wherein the resistor film is approximately 1000 angstroms thick and the substrate comprises an oxidized silicon substrate; the method including the further steps of controlling sputtering power and pressure to obtain Rs and TCR values in accordance with the following table:

Rs (ohms/Square	TCR (ppm/C)	Pressure (mTorr)	Power (kW)
250	≤-200	10	2.0
400	≤-220	14	1.0
800	≤-260	14	0.4
1500	≤-400	18	0.4

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